ICNMST-2025
28-30 April, Parkent, Uzbekistan
International Conference
"New Materials and Solar Technologies"

UZBEKISTAN ACADEMY OF SCIENCES

INSTITUTE OF MATERIALS SCIENCE

April 28-30, 2025

PROGRAM OF THE INTERNATIONAL CONFERENCE "THE NEW MATERIALS AND SOLAR TECHNOLOGIES"

№	Events	Venue	Time
	The first day		
1	Arrival of the conference participants at the "Big Solar Furnace" facility.	Parkent district, Tashkent region. Unique scientific object "Big Solar Furnace"	April 28, 2025 09:00
2	Observation of the museum of the IMS and the activities of Academician S.Asimov, the founder of the facility.	Conference hall	09:00-09:45
3	Opening of the International Conference "**The New Materials and Solar Technologies**"	Conference hall	10:00 – 10:30
4	Plenary session	Conference hall	10:30 – 13:00
5	International Workshop "**Memory of rare and non-equilibrium events**"	Conference hall	14:30 – 17:30
6	Section 1: **Nano and nanocomposite materials with specified properties**	Workshop hall 1	14:30 – 17:30
7	Section 2: **Materials for "green" energy**	Workshop hall 2	14:30 – 17:30
	The second day		
1	International Workshop "**Memory of rare and non-equilibrium eventst**"	Tashkent IFAR	April 29, 2025 10:00 – 18:00
2	International Conference "The New Materials and Solar Technologies" **Oral presentations of young scientists**	Unique scientific object "Big Solar Furnace"	10:00 – 12:30
	The third day		
1	International Workshop **"Materials in Biotechnology with Shape Memory Effect"**	Tashkent IFAR	April 30, 2025 10:00 – 18:00

Attention! There may be changes in the program.

28 April, 2025 (Parkent)
"The New Materials and Solar Technologies"

Time	Min.	Name of speaker	Title of talk
Opening of the International Conference **"The New Materials and Solar Technologies"**			
10:00 – 10:10	10	**Dr. O.Parpiev**, Director IMS	Opening Remarks. Introduction of IMS
10:10 – 10:20	10	**Academician Sh.Ayupov**, President of Uzbekistan Academy of Sciences	Greetings
10:20 – 10:25	5	**Prof. Roland Netz,** Theoretical Bio- and Soft Matter Physics. Germany	Greetings
10:25 – 10:30	5	**Dr. Tuychiev Olimjon**, Rector of Turin Polytechnic University in Tashkent	Greetings
Plenary sessions			
10:35 – 11:00	25	**Prof. Mirzaev Sirojiddin,** vice-president of the Uzbekistan Academy of Sciences	
11:00 – 11:25	25	**Prof. Jingxiang Low**, Tiangong University, University of Science and technology of China, China	Low-carbon conversion of small molecule gases towards practical applications
11:25 – 11:50	25	**Prof. David Andelman,** Emeritus in School of Physics and Astronomy, Tel Aviv University	A few recent results in the theory of electrolytes
11:50 – 12:15	25	**Prof. Wen He**, School of Materials Science and Engineering Anhui University, China	Self-powered charging system based on triboelectric nanogenerator and supercapacitor
12:15 – 12:30	15	Q/A session	
12:30 – 13:15	45	Observation of Big Solar Furnace	Introduction of "Green Technologies Valley" Consortium Initiative
13:15 – 14:00		***Lunch***	
International Workshop "**Memory of rare and non-equilibrium events**"			Conference Hall
14:00 – 14:45	45	**Prof. Dominik Horinek,** Regensburg University, Germany	Solvation of Nanoions
14:45 – 15:30	45	**Prof. Benjamin Dalton**, Department of Physics, Freie Universität Berlin	Fast protein folding is governed by memory-dependent friction
15:30 – 16:00	30	**Coffee break**	
16:00 – 16:30	30	**Prof. Prabal K Maiti,** Department of Physics, Indian Institute of Science, Bangalore	Unraveling the Mpemba Effect: Nonequilibrium freezing kinetics of supercooled liquid water

Attention! There may be changes in the program.

16:30 – 17:00	30	**Prof. Jamoliddin Razzokov**, Director, Institute of Fundamental and Applied Research under TIIAME National Research University	Exploring the Role of Proteins in Plasma Cancer Treatment: Simulations Reveal Molecular Secrets
17:00 – 17:30	30	**Prof. Yevgeni Mamasakhlisov,** Yerevan State University	Projection operator and reaction coordinates choice

Section 1: **Nano and nanocomposite materials with specified properties** — Workshop Hall 1

Moderator: **Prof. Jingxiang Low**, Tiangong University, University of Science and technology of China

14:00 – 14:30	30	**Poster presentations**	
14:30 – 14:50	20	**Prof. Bekchanov Davron**, National University of Uzbekistan	Advanced magnetics functional material Fe_3O_4/PPE-2 for efficiently photocatalytic degradation organic of dye Rhodamine B
14:50 – 15:10	20	**Dr. Doroshkevich Aleksandr,** Joint Institute for Nuclear Research, Dubna, Russia	Nuclear physics research and powder nanotechnology in advance power engineering and electronics
15:10 – 15:30	20	**Dr. Mezentseva Zhanna,** Joint Institute for Nuclear Research, Dubna, Russia	New organo-inorganic perovskite materials for medical radiographs of new generation
15:30 – 16:00	30	**Coffee break**	

Moderator: **Prof. Ruzimurodov Olim,** Turin Polytechnic University in Tashkent

16:00 – 16:20	20	**Dr. Yisong Fan**, The Key Laboratory of Photonic Devices and Materials, Anhui Institute of Optics and Fine Mechanics, HFIPS, Hefei, PR China	Development of a multi-modal laser detector for copper and geological minerals
16:20 – 16:40	20	**Dr. Rakhimov Khamdam**, Institute of Materials Science, Uzbekistan	Wave packet dynamics in graphene with square and triangular patterned potentials
16:40 – 17:00	20	**Dr. Tursunkulov Oybek**, Center for Advanced Technology, Uzbekistan	CVD growth of discrete multilayer graphene domains: morphological and structural analysis
17:00 – 17:20	20	**Ms. Arai Abdimutalip**, H.A. Yasavi International Kazakh-Turkish University, Research Institute "Natural Sciences, Nanotechnologies and New Materials"	Microstructure and Phase Properties of $Al_{65}Cu_{20}Fe_{15}$ Quasicrystal Coatings Deposited by HVOF
17:20 – 17:30	10	Q/A session	

Attention! There may be changes in the program.

Section 2: **Materials for "green" energy**			Workshop Hall 2
Moderator: **Prof. Olimov Khusniddin**, Director of Physical and Technical Institute of AS RUz			
14:00 – 14:30	30	**Poster presentations**	
14:30 – 14:50	20	**Dr. Nurmatov Shavkat**, Institute of Materials Science, Uzbekistan	Solar Energy development in Uzbekistan
14:50 – 15:10	20	**Dr. Parmanov Askar**, National University of Uzbekistan	The reaction of aromatic carboxylic acids with phenylacetylene in catalytic systems
15:10 – 15:30	20	**Prof. Jian Yin**, Environmental Sciences and Technology LAB Xinjiang Technical Institute of Physics & Chemistry Chinese Academy of Sciences	
15:30 – 16:00	30	**Coffee break**	
Moderator: **Dr. Suleymanov Sultan**, Institute of Materials Science			
16:00 – 16:20	20	**Dr. Saidov Kamoladdin,** Department of Electronics and Radio Engineering, Tashkent University of Information Technologies, Tashkent	Development of Transition Metal Dichalcogenides for Optoelectronic Devices and Selective Amplification Enhancement
16:20 – 16:35	15	**Dr. Alexander Chipura,** Samara State Technical University, Russia	C-14 Beta Energy Converter based on SiC/Si
16:35 – 16:50	15	**Mr. Sardor Khusnutdinuly**, H.A. Yasavi International Kazakh-Turkish University, Research Institute "Natural Sciences, Nanotechnologies and New Materials"	Investigation of the effect of HVOF deposition parameters on the mechanical properties of ZrCN coatings
16:50 – 17:05	15	**Mr. Midhat Fayrushin,** Phenix Ltd. Innopolis, Russia	New generation Solar thermal energy concentrator
17:05 – 17:20	15	**Mr. Hoshimov Farhodjon,** Institute of Materials Science of Uzbekistan AS	Hydrothermal Synthesis of CoFeNi/NF Nanostructures and Their Enhanced Electrocatalytic Performance for Alkaline Water Splitting Compared to Conventional Transition Metal Catalysts
17:20 – 17:35	15	**Mr. Saidov Abdulla,** National University of Uzbekistan, Tashkent	Crystal structure and hirschfeld surface analysis of the complex of 2-amino-1-methylbenzimidazole with cd(ii) chloride

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29 April, 2025 (Tashkent)

International Workshop "**Memory of rare and non-equilibrium events**"			IFAR, Conference Hall
9:00 – 9:45	45	**Henri Orland, Prof.** Institut de Physique Théorique, CEA-Saclay	Statistical Physics of Optimal Transport and Schrödinger Bridges
9:45 – 10:30	45	**Won Kyu Kim, Prof.** KAIST, South Korea	Escaping Confinement: Optimizing First-Passage Rates
10:30–11:00		**Coffee break**	
11:00–12:30	30	**Philip Loche, Postdoc** at Department of Physics, Freie Universität Berlin	Machine-Learning Potentials: A New Pathway to Accurate Simulations of Thermodynamic Ion Properties and Rare Exchange Kinetics
12:30–14:00		***Lunch***	
14:00–14:45	45	**Nadine Schwierz, Prof.** Ausburg University, Germany	Atomistic machine learning from the bottom up
14:45–15:30	45	**Aykut Erbas,** Assistant Professor at the National Nanotechnology Research Center at UNAM – Bilkent University, Turkey	Pseudo Non-Equilibrium Response of the Cell Nucleus
		Coffee break	
16:00–16:45	45	**Susanne Liese, Postdoc** at University of Augsburg, Institute of Physics	Modeling cellular interfaces

29 April, 2025 (Parkent)

International Conference "**The New Materials and Solar Technologies**" *Oral presentations of young scientists*			IMS, Conference Hall
10:00 – 10:15	15	**Mr. Javlon Mamanazirov**, Institute of Materials Science, Uzbekistan	MXene-Based Electrocatalysts for HER and OER
10:15 – 10:30	15	**Mr. Sobitov Mirazim**, National University of Uzbekistan	Forming a highly ordered polystyrene template
10:30 – 10:45	15	**Mr. Muxamadqulov Shohboz** Institute of Ion-Plasma and Laser Technologies of Uzbekistan AS	Effect of Support material on Steam Deactivation of Cobalt catalyzed Dehydrogenation of Propane
10:45 – 11:00	15	**Mr. Nurimov Alisher**, Samarkand State University, Uzbekistan	Electrical properties of the $CsPbBr_3/SiO_2/Si$ hybrid structure
11:00 – 11:15	15	**Mr. Otabek Rajamatov**, Institute of Materials Science of Uzbekistan AS	Ceramic Magnetic Materials Synthesised by Sunlight
11:15 – 11:30	15	**Mr. Elyor Eshonqulov**, Institute of Materials Science of Uzbekistan AS	Development of the Fundamentals of Solar Technology for the Synthesis of High-Temperature Bismuth-Based Superconductors

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11:30 – 11:45	15	**Ms. Bakhronova Sadokat**, Institute of Materials Science of Uzbekistan AS	Methods of Measurement of High-Concentrated Solar Energy Flows
11:45-12:10	25	Q/A session	

30 April, 2025 (Tashkent)

International Workshop **"Memory of rare and non-equilibrium events"**			IFAR, Conference Hall
9:00 – 9:45	45	**Yuki Uematsu, Assistance** Professor, Department of Physics, Kyushi University, Japan	Zeta potentials of cotton membranes in acetonitrile solutions
9:45 –10:30	45	**Alexander Schlaich,** Professor, Hamburg University of Technology, Germany	Aqueous Supercapacitors: Insights from Atomistic Simulations of Electrode/Electrolyte Interfaces Combined with Effective Medium Theory
10:30–11:00		**Coffee break**	
11:00–11:45	45	**Michael Hinczewski, Prof.** Department of Physics, Case Western Reserve University, USA	The price of evolution: how thermodynamics shapes gene regulation
11:45–12:30	45	**Maksudbek Yusupov, Prof.** Institute of Fundamental and Applied Research under TIIAME National Research University	MD simulations for plasma cancer treatment: a case study with phospholipid membranes
12:30-14:00		***Lunch & Networking***	
14:00–14:45	45	**Umedjan Khalilov**, **Prof.** Ion Plasma and Laser Technologies Institute	Selective Growth of Carbon Nanostructures: A Computational Perspective
14:45–15:30	45	**Matej Kanduc, Prof.** Department of Theoretical Physics, Jozef Stefan Institute, Ljubljana, Slovenia	Cavitation events in soft matter systems
15:30-16:00		**Coffee Break**	
16:00–16:30	30	**Dr. Shavkat Mamatkulov,** Institute of Materials Science of Uzbekistan AS	Force field development for polymolecular ions

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